

CHEMICALLY MODIFIED MUTANT SERINE HYDROLASES SHOW IMPROVED CATALYTIC ACTIVITY AND CHIRAL SELECTIVITY

ABSTRACT OF THE DISCLOSURE

5 This invention provides novel chemically modified mutant serine hydrolases
that catalyze a transamidation and/or a transpeptidation and/or a transesterification reaction.
The modified serine hydrolases have one or more amino acid residues in a subsite replaced
with a cysteine, wherein the cysteine is modified by replacing the thiol hydrogen in the
cysteine with a substituent group providing a thiol side chain comprising a moiety selected
from the group consisting of a polar aromatic substituent, an alkyl amino group with a
10 positive charge, and a glycoside. In particularly preferred embodiments, the substituents
include an oxazolidinone, a C₁ to C₁₅ alkyl amino group with a positive charge, or a
glycoside.

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